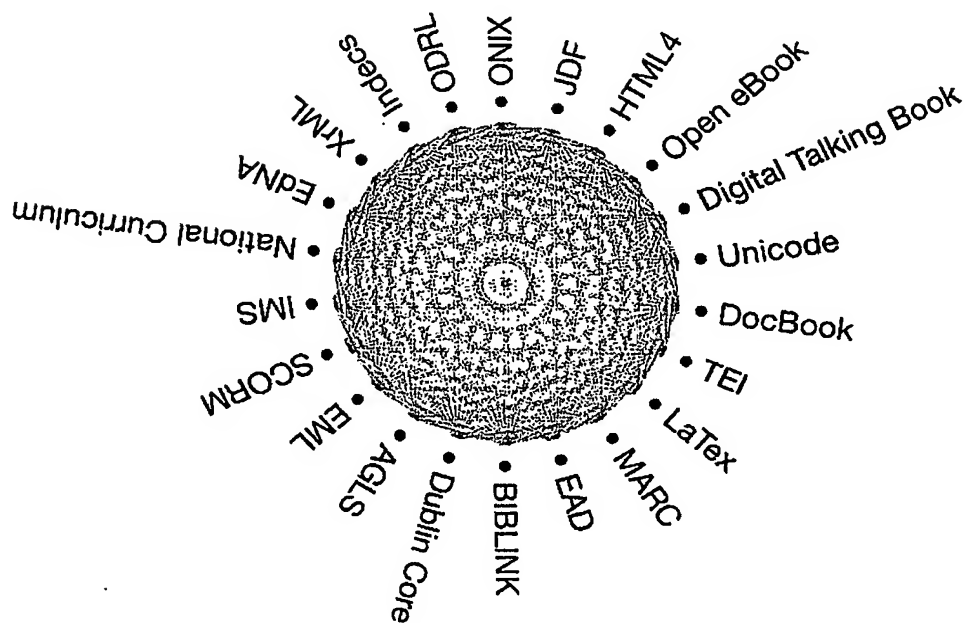


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FIG. 1: The Crosswalks Dilemma Illustrated—17 Ontologies Require 272 Crosswalks



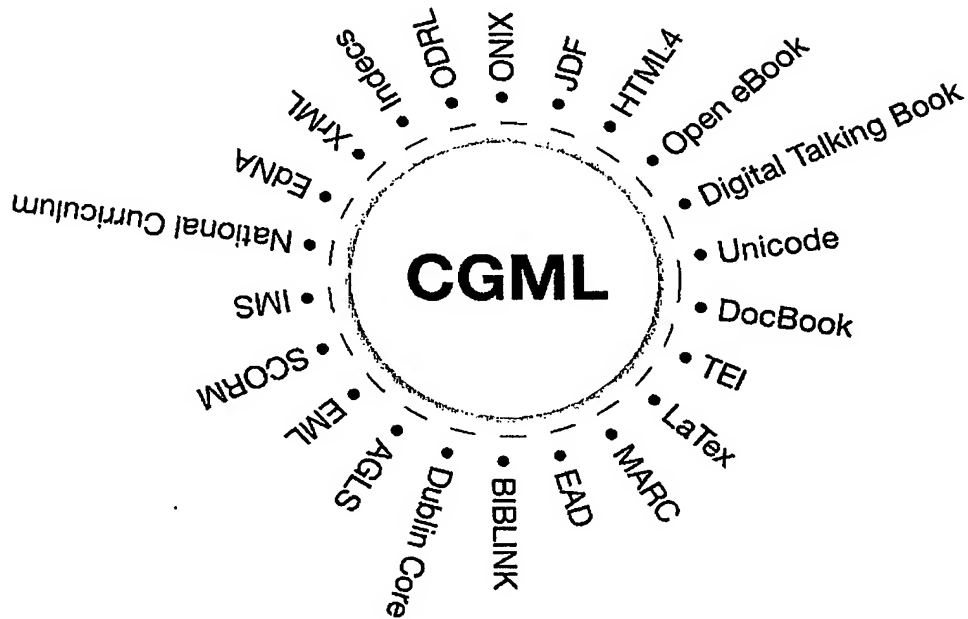
2/10

FIG. 2: The Indefinitely Extensible Interlanguage Mechanism—Common Ground Markup Language (CGML) as an example.



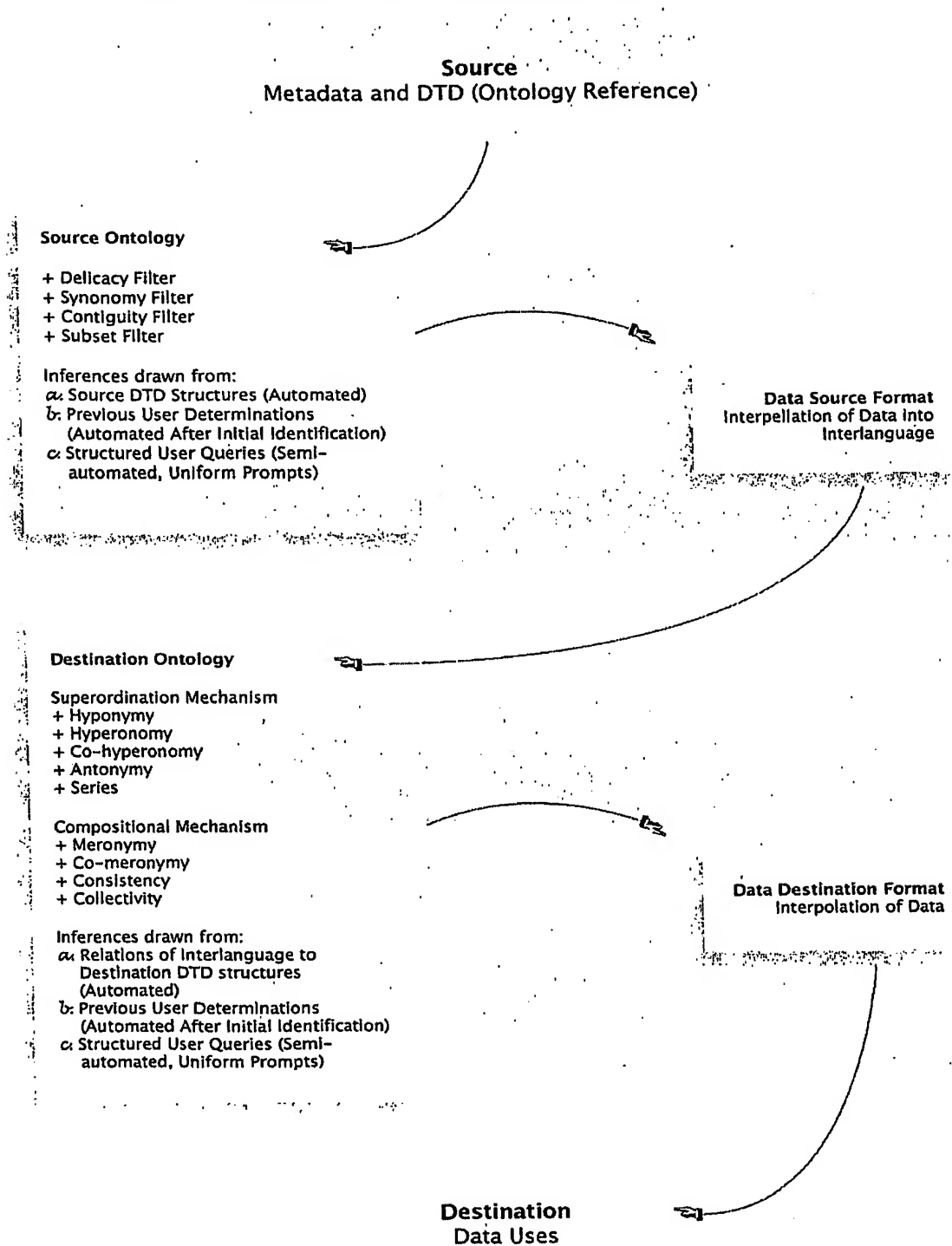
3/10

FIG. 3: Using the Interlanguage Mechanism, the Number of Mappings Equals the Number of Mapped Schemas (in this case  $n = 17$ )



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FIG. 4: The method of operation of the Interlanguage apparatus.



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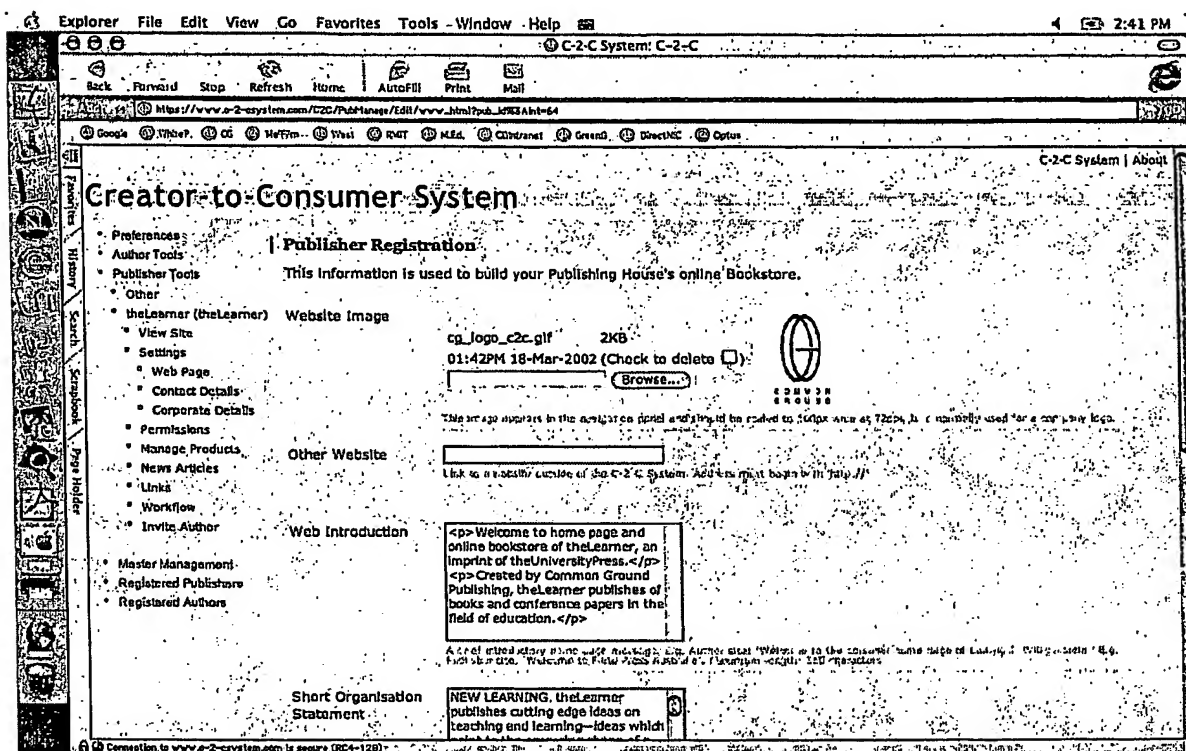
FIG. 5: Ontology-Building Apparatus—CGLexicographer.

Property	Field	View	Comments	Undo	Secure
<b>Ontology Term at Zope → Intranet → CGOntology → CGCountryOfPublication</b>					
Structure Properties					
Tag-Concept	Country Of Publication				
Dictionary Definition	The country in which a <ref id="CGPublisher"/> or an <ref id="CGImprint"/> officially publishes a particular <ref id="CGProduct"/>.				
Description					
Children	<div>CG35mmSlideProjector CGAGLS CGASPCContractsDelegation CGAbbreviatedTitle CGAbbreviation CGAbbreviationList CGAbridgedVersionOf</div>				
Schema Synonyms	ONIX<CountryOfPublication> MARC<008, 044\$>				
Data Type	<div></div>				
Is a field?	<input checked="" type="checkbox"/>				
<div>Save Changes</div>					

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FIG. 6: Data entry area in CGPublisher (formerly named the Creator-to-Consumer (C-2-C) System. Using the invention, data can be exported into multiple ontologies.



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FIG. 7A: Example of Taxonomic Representation of Tags Relations in overlapping Ontologies, as Generated by the Invention with First to Fourth Order Concepts

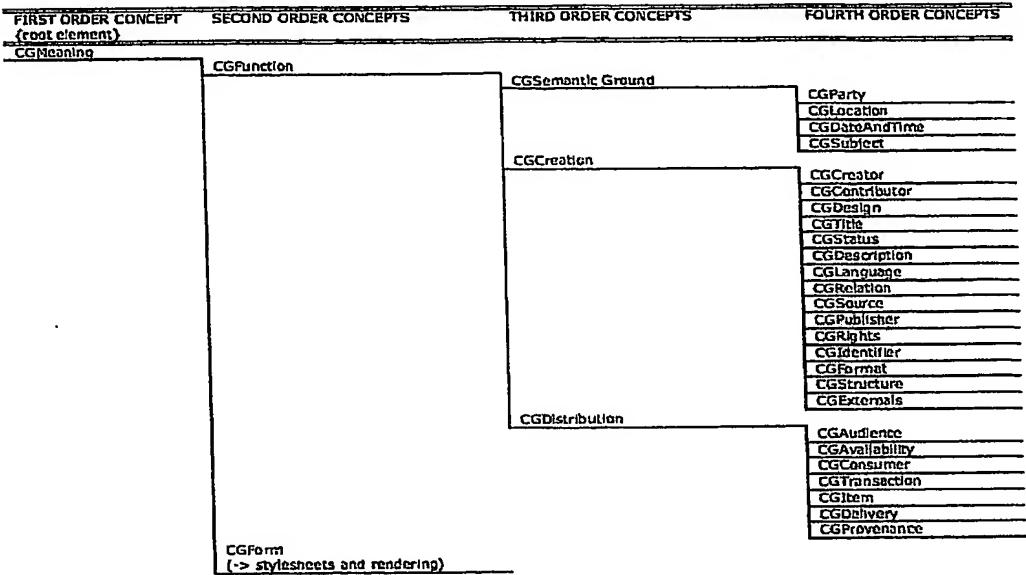


FIG. 7B: Example of Taxonomic Representation of Tags Relations in overlapping Ontologies, as Generated by the Invention with Fourth to Sixth Order Concepts

FOURTH ORDER CONCEPTS	FIFTH ORDER CONCEPTS	SIXTH ORDER CONCEPTS
CGParty XrML<principal> IN<party> SCORM<entity>	CGPerson IMS<person> ONIX<Name> XrML<commonName> IN<person> EAD<persname> MARC<100/700 I1 = 1; I2 = # ; \$a,600 I1 = 1; I2 = 4; \$a >	CGNameFunction CGNameOfPublication CGLegalName CGInitialName CGHonorific ONIX<TitlesBeforeNames> DB<honorific> MARC<100/700 I1 = 1; I2 = # ; \$a; \$c,600 I1 = 1; I2 = 4; \$c > CGGivenNames ONIX<NamesBeforeKey> DB<firstName>,DB<othername> MARC<100/700 I1 = 1; I2 = # ; \$a,600 I1 = 1; I2 = 4; \$a > EML<Initials-prefix> CGSurnamePrefix ONIX<PrefixToKey> CGSurname ONIX<KeyNames> DB<surname> EAD<famname> MARC<100/700 I1 = 1; I2 = # ; \$a; \$b,600 I1 = 1; I2 = 4; \$a > CGNameSuffix ONIX<SuffixToKey> DB<lineage>
	V (to CGOrganisation)	

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FIGURE 8 shows a fragment of the Dublin Core to CGML Thesaurus.

CGML Tag/concept	DC Tag/concept	DC Values, Qualifiers
CGTitle	DC<Title>	Definition: A name given to the resource. Comments: Typically, a Title will be a name by which the resource is formally known. Exemplary Qualifiers: Label: Alternative Definition: Any form of the title used as a substitute or alternative to the formal title of the resource. Comments: This qualifier can include title abbreviations as well as translations. MARC<245>
CGCreator	DC<Creator>	Definition: An entity primarily responsible for making the content of the resource. Comments: Examples of a Creator include a person, an organisation, or a service. Typically, the name of a Creator should be used to indicate the entity. MARC<100, 110, 111, 200, 710, 711, 720>
CGSubject	DC<Subject>	Definition: The topical content of the resource. Comments: Typically, a Subject will be expressed as keywords, keyphrases and classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme. Exemplary Qualifiers: Label: LCSH Definition: Library of Congress Subject Headings MARC<600, 610, 611, 630, 650> Label: MeSH Definition: Medical Subject Headings See also: <a href="http://www.nlm.nih.gov/mesh/meshhome.html">http://www.nlm.nih.gov/mesh/meshhome.html</a> MARC<600, 610, 611, 630, 650> Label: DDC Definition: Dewey Decimal Classification See also: <a href="http://www.ddc.org/dewey/index.html">http://www.ddc.org/dewey/index.html</a> MARC<000> Label: LCC Definition: Library of Congress Classification See also: <a href="http://www.loc.gov/catdir/cpso/lcco/lcco.html">http://www.loc.gov/catdir/cpso/lcco/lcco.html</a> MARC<050> Label: UDC Definition: Universal Decimal Classification See also: <a href="http://www.udc.org/">http://www.udc.org/</a> MARC<080> MARC<600, 610, 611, 630, 650, 670>

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FIGURE 9 shows a fragment of the CGML Dictionary of Authorship and Publishing specifying the concepts of <Creation> and <Creator>.

NOTATION Tag-Concept.	DEFINITION Dictionary definition based on parent concepts.	ANNOTATION Examples, related child concepts, data entry advice.
CGCreation	The process of realising Meanings which serve particular communicative or representational Functions.	Involves Creators and Contributors, developing a Design, which is expressed as a Work and is manifest in the form of a Product, Event or Service. A Design has a Title and may vary in Status (as it evolves, for instance, from Proposal, to Draft, to Edition). It may have a Description which summarises or overviews its content. In the case of text, it will be expressed in a particular Language. It may sit in a defined Relation to other Designs, Works or Products, and this may be specified as a Source. Distribution may be the responsibility of a Publisher, on the basis of an assignment or licensing of Rights. It may have an Identifier in the form of a unique string of numbers and/or letters such as an ISBN or a URL. It will have a Format and an inherent and characteristic Structure, and also possibly Externals which exist specifically in order to relate to the Work, for example by way of Review or Promotional Matter.
CGCreator	A Person who, or an Organisation which, plays a primary role in the conceptualisation of a creative Design and the execution of a Work. An essential Party to the process of Creation.	Includes the roles of Author, Editor, Scriptwriter, Lyricist, Composer, Visual Artist, Photographer and Conference Presenter.